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REVIEWS.

FRANCES DENSMORE, *Teton Sioux Music* (Bulletin No. 61, Bureau of American Ethnology). Washington, D.C., 1918.

THIS is Miss Densmore's third contribution to the study of American Indian music. Bulletins 45 and 53 dealt with the songs of the Chippewa. The present collection not only covers two hundred and forty melodies recorded among the Sioux, but includes a tabular comparative analysis of these and the three hundred and forty Chippewa songs before mentioned, as well as of twenty Siouan tunes found among the Chippewa. The two tribes have enjoyed considerable intercourse, a fact which is revealed by a study of their music and other phases of their culture.

In addition to the collection of songs and their individual analyses, which are distributed through the second half of the book between full descriptions of the circumstances surrounding their composition and rendition, numerous tables of statistics covering these analyses from many points of view are assembled in the first part, together with the comparative analysis just referred to. There are several chapters enlarging upon these, and discussing the trend of musical development of the Sioux as indicated by a comparison of their old and more recent compositions.

The details of the business of recording and transcribing, — such as care in the selection of the informants and singers; accuracy in measurements of speed and pitch; the securing of several records of each song, made by the same and by different singers, in order to procure a series that will assist the transcriber in discriminating between peculiarities inherent in the song and those which are to be ascribed to individual methods of singing; the repetition of readings made from them at sufficient intervals to permit the influence of previous impressions to lapse, and thus minimize a possible bias on the part of the transcriber, — all attest to the fact that Miss Densmore realizes the importance of obtaining correct and complete results.

For a complete study in the present instance, the subject should also have been approached, as far as possible, from the composer's point of view, as well as from that of the analyst subsequently examining it. In the case of records made years ago by ethnologists who had not the musical knowledge to aid them in mapping out suitable lines of investigation, no other method than the objective is now possible in the study of musical form presented by them; and this is true of those whose origin belongs to antiquity. In collecting from primitive people, we should avail ourselves of every opportunity to obtain data first-hand by discussing with those still inventing songs questions which might lead to a revelation of what in their eyes were the principles of their construction.¹ Only a suggestion of the possible wealth

¹ That such a procedure often yields rich and unexpected results, has recently proved to be the case in the investigation of other phases of culture; and there is no reason to believe that similar enlightening information might not be forthcoming in the question of musical composition. Certainly an art that in many respects shows a considerable degree of development has not escaped reflective observation and pattern imitation on the part of its creators, even though music is emotional in character, and thus perhaps nearer the boundary of the unconscious than basketry, for instance.

of information to be had appeared in a statement, made by several informants, that there were different ways of ending songs, by which types could be differentiated.

On the other hand, the lengthy descriptions following each song, which deal with the circumstances or psychological conditions under which it is claimed to have been composed, or with the occasions on which it is sung, fall outside the present discussion, since they do not contribute to a theoretical review of the music itself.

The material consisting of songs, tables, and chapters on "Method of Work and Analysis," "Comparison between Old and Comparatively Modern Sioux Songs," "Analysis of Sioux and Chippewa Songs," although constituting less than half of the book, is its most important part, and represents by far the most work. It calls for considerable comment, not only because of the many ingenious ideas it contains, but also because it is believed that there are a number of points in methodology and terminology on which musicians and scientists will disagree with the author.

The writer of this review here makes a plea, while the scientific study of primitive music is still in its infancy, that a universal, concise, and accurate system be adopted for designating pitches, tone-lengths, and other musical situations in which primitive music differs from that which can be represented by our existing European plan of notation.

The hold-signs employed in the present work to designate shortened and lengthened note-values are not sufficiently definite, especially since it is generally believed that very small time-values are observed by many Indian singers and dancers, and that in matters of rhythm they are particularly well versed. It is rather surprising that one so precise as Miss Densmore considers it necessary to be in the matter of measuring speeds of cylinder revolutions, metronome indications, and in the placing of drum-beats, and who is so interested in the question of rhythms, should be so lax in assigning exact time-values to all of the notes. The accurate indication of pitches depends primarily upon some mechanical method of measuring them, which is absolutely necessary for a truly scientific study; although for general purposes a keen discrimination on the part of the transcriber is perhaps enough, provided a more accurate system of notation is adopted than our own.

As several musicians contend, it is a question as to how far it is necessary to go in the indication of deviations in pitch from those determined by our staff degrees and chromatic signs, since unintentional deviations of considerable magnitude are constantly made, even by our own trained singers, under varying psychological and physical conditions. Nevertheless, to a normal ear a half-step is appreciably larger than a quarter-step; and since we are dealing with music which is by no means as yet proved to be like our own, and for any proof requires accurate transcribing as well as measuring, it would seem advisable to provide for differences at least as small as an eighth, even though it may later be proved to the satisfaction of all concerned that for native song, *not based on instrumental scales*, those pitches which differ considerably from true overtones and their nearest related partials are not likely to be encountered except among bad singers. Even were it not better for the present to employ as exact signs as possible, the + and - signs used by Miss Densmore are confusing, because the latter sign has long been used by classical composers to denote stressed tones.

On account of this indefiniteness, no scientific trust can be placed in the transcriptions and the tables, for the purpose of discovering the exact scales in use by the two tribes, the physical reasons for their adoption, or their possible relation to the tone-systems of instruments; but, accepting the songs as written, they are valuable none the less from the standpoint of their structure and general tonal content.

A study of music may and must be made from two points of view, in order to be complete, — namely, that of musical form, and that of tonal content, — corresponding to the idea of design as a whole or in well-defined sections, and to the elements of material from which this is built. Logically, an examination of tonal content should precede that of musical form; but since, under the circumstances in the present instance, our speculations in that direction necessarily lead us along only general lines, it remains to establish what we can in other directions.

To the mind of the reviewer, Miss Densmore might have reached entirely different and new results if she had studied her songs from the standpoint of musical form, because that is necessarily linked with questions of metre and rhythm, and assists materially in determining these often perplexing points when transcribing, which is the starting-place of all analysis.

The questions of rhythmic units and the trend of melodies, which latter Miss Densmore has so ingeniously clarified by the device of plotting, belong to this branch of the study, but are merely the first steps in its fascinating possibilities. For reasons that will soon become apparent, however, the writer differs with her method of dividing the former.

Except in analyses which deal only with tonal content or monotonic music, metre, rhythm, and melody go hand in hand. Theoretically, the first two should coincide with the word-accents of the accompanying texts, if the song is a spontaneous utterance, or if the adaptation of new words has been happily accomplished; but it is an all too well-known fact that Indian songs, like any tunes that prove attractive, are frequently furnished with texts which do not fit. In such cases the word-accents usually give way to the original accents of the melody, although at times they are sufficiently strong to prove disturbing to the transcriber, or to equalize the stress on a number of tones in the space of a few measures. It does not seem, however, that this can be taken as a good reason for changing the position of the measure-bars, unless the accent is very decided, but rather that a study should be made of the situations elsewhere in the song, where the same melodic idea occurs, with a view to establishing consistency whenever possible. In her own experience in transcribing, the writer has noted, on subsequent analysis, that just such differences in metre for identical melodic phrases had crept in. These were adjusted temporarily, and confirmation for the correctness of the alteration sought in another reading. It was usually found that the revised versions were as acceptable as the first, or at least that in the original, one or another of the divisions had been misconceived, because of the slight preponderance of a word-accent or for some other incidental cause. Disregarding this, the uniformity of metre and rhythm in similar melodic sections was general, although small rhythmic changes, such as subdivisions of already existing values, sometimes occur with the presence of extra syllables. A strong accent, however, could never be disregarded with impunity, no matter how irregular its appearance.

Misconceptions are more apt to occur in the earlier part of the song, while the transcriber is becoming familiar with the song and singer, than later, and, once impressed upon the memory, are difficult to efface. Again, they are due to the fact that the singer has not attacked the swing of the melody in the beginning.

Although realizing that these are delicate matters for discrimination, and consequently to be approached with the greatest care, and that at times, like fixing a tonality, they are capable of several interpretations, according to the personal opinions of individual transcribers, I have selected at random two of Miss Densmore's songs, in order to illustrate these points. Following the author's original versions, others have been introduced, in which the upper lines of braces and the parentheses on the staff indicate the plan of the melodic structure, by marking off the complete melodic phrases, and indicating their internal or external development or variation by means of extensions or contractions of the melodic theme. No attempt has been made to determine the boundaries of the phrases by observing the rule of full or semi cadences, as might be suggested by the melody to a student looking for implied harmony. Rather, they have been determined by what may be called natural phrasing (that is, lingering on long notes, as if pausing) or the word phrasing, or by repetitions of parts either melodically identical or revealing the same structural plan. The lower braces mark off the rhythmic and metric units,¹ or patterns; and it will be seen that the former differ in some cases considerably from those in the original versions, on account of the shifted measure-bars or the phrasing of melody or words.

NO. 222. "TWO WHITE BUFFALO."

(Sung by Shoots-First.)

(Catalogue No. 642)

Voice = 60.
Drum = 60.

The musical notation consists of two staves. The first staff is in 3/4 time and contains a single melodic line with a brace labeled (1) above it. The second staff is in 2/4 time and contains a single melodic line with two braces labeled (1) above it. The notation is written on a single staff with a treble clef and a key signature of one flat.

¹ There is some confusion in regard to the author's use of these terms. The former is defined as a group of notes of various values, which occur more than once in a song in the same order, and influence its character. The term "metric unit" is applied to one note which has been accepted as the standard of value. I have applied the term "metric unit" elsewhere (JAFL 31: 496 *et seq.*) to groups comprising a number of measures of the same or different lengths, which show a metric if not melodic relationship in their combined length in beats, and of which more than one occurs in a song, properly defined by the conditions of phrasing already mentioned. The idea is analogous to that of "rhythmic unit" in a larger sense. Considering the confusion that may arise from these two uses of the term, the writer withdraws her application of it, and hereafter substitutes the term "metric pattern," with a suggestion that the term "rhythmic unit" be abandoned in favor of "rhythmic pattern."

(1) (1)

(2)

Pte-san-non-pa - win *he* bli-he-i - íi ya un-wo o - ya-te o-kśan *he*

(1) (1) (1) (1)

wa-ćin - ni-yan a - u we-lo *he* na-ke - non-la ya-on we -lo

(2)

To-ka - la-lu - ta *he* he-ya ke-ya pe - lo *he he*

Ptesan'-non'-pawin	Two White Buffalo
blihe'íciya unwo'	take fresh courage
oya'te	the tribe
okśan'	in general
waćin'niyan	depend upon you
aü' welo'	when they come
nake'nonla yaön' welo'	a short time you live
Toka'-la-lu'ta	Red Fox
heya' keya' pelo'	said this, it is reported.

(Revised Version.)

INTRODUCTION.

I A

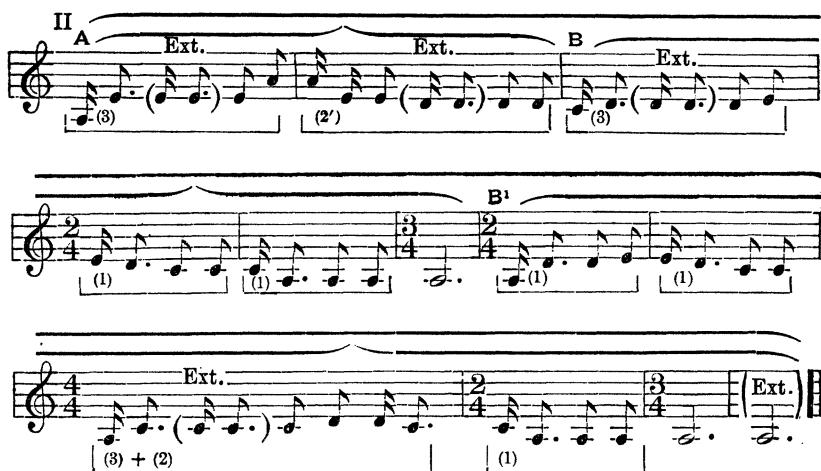
(1)

B B'

(1) (1) (1) (1)

Extension.

(1) (2) (1) Ext.



It does not seem warranted, in compositions like the above, to pick out arbitrarily certain notes, even if repeated in a definite order of time-values, and mark them as rhythmic units or patterns, without regard to the notes preceding or following them, which might be incorporated to form others, and thus account rhythmically for more of the song than a few isolated notes here and there. If it were justifiable to form a pattern from part of a measure, then it would be allowable to combine fractions of two adjoining measures to create patterns, if the sequence of note-values conforms to the standard, as they do in the third and fourth measures of Miss Densmore's version. The changed measure-bars dispense with this difficulty.

NO. 195. "THEY ARE CHARGING THEM."

(Sung by Kills-at-Night.)

(Catalogue No. 593)

Voice $\text{♩} = 72$
Drum $\text{♩} = 72$

E he a-wi-ća u pe-lo he ha-ki-kta yo

he a-wi-ća u pe-lo he ha-ki-kta yo

he a-wi-ća u pe ni-ta-ko-la he a-wi-ća u pe

he ha-ki-kta yo he a-wi-ća u pe he



ha-ki-kta yo he a-wi-ča u pe ha-ki-kta-yo

awi'ča u pelo' (they) are charging them
 haki'kta yo look back
 nita'kola your friends
 awi'ča u pelo' are charging them.

(Revised Version No. 1.)

INTRODUCTION.



(Revised Version No. 2.)





This truly remarkable and stirring song was a purely accidental selection on the part of the writer. Its beauties and complexities were not at first observed, although it was apparent that a complicated plan was at the bottom of it. The melody is spirited in the extreme, and a mere singing of it with the proper accent gives a forcible impression of galloping horses and buffalo. It would seem from a glance at the words as they are accented in ordinary speech and in the song, and from the fact that the last measure has no words and that in several cases the syllable *lo* has had to be omitted from the word *pelo*, that they were conceived separately from the melody, which no doubt was inspired by the rhythm of beating hoofs. Nevertheless there is a poetic plan, which is singularly coincident with that of the music.

The purpose in reproducing the song here is not to illustrate an adjustment of metric or rhythmic to melodic divisions, for in this instance these are perfectly consistent. The selection of the rhythmic units or patterns in this case is perhaps a matter of taste, and controlled by the poetic conception. A combination of the two-part and three-part measures into five-part ones would also be a matter of opinion, as would the question as to whether it should be a combination of two and three, or three and two. It has been introduced in "Revised Version 1" to show the possibilities.

The object in using this example is to indicate the importance of the study of musical and poetic form. According to the conception of the poetry, the song may be analyzed in several ways. The first is given in No. I. Here, following Miss Densmore's lead and the combination of the rhythmic unit or pattern as she has indicated it, it will be observed that the first phrase stands alone. The words state "They are charging them," with the meaningless syllables italicized. We take it, then, that the real poetic order is, —

They are charging them,
 Look back, they are charging them,
 Look back, they are charging them,
 Your friends are charging them,
 Look back, they are charging them,
 Look back, they are charging them,
 Look back!

This is followed by a measure which has no words.

The analysis of the melodic structure has been made upon this assumption. Thus the first phrase is an introduction. The song proper begins at A. Exactly the same rhythmic idea is present in both A and B, except for the third measure, which is lacking in B. The melodic beginning for each phrase is very different. Then follows a third phrase, C, "Your friends

are charging them," which is similar to A, but is mostly transposed a fifth downward. The second half of the song is modelled upon the first, but with variations. The first measure of A' resembles in construction that of B, but the remainder of the phrase is an exact duplication of A an octave lower. B' is an exact sequence of B an octave lower; C', again an exact sequence of C, except that it is irregular in lacking the last measure. Dividing the phrases by measure with the number of beats for each, and each row indicating a phrase, we have the following metric order: —

33		33
53	or, abandoning the 5-part	233
553	measure arrangement, we have	23233
53		233
55 (3 missing)		2323 (3 missing)

Other evidences of design within design are to be found in the composition of the triplets and their pitch-relation to each other, which will be more fully discussed in the following paragraph.

In the second revised version it is assumed that the song begins at the beginning, and the poetic form is as follows: —

They are charging them, look back!
 They are charging them, look back!
 They are charging them, your friends.¹
 They are charging them, look back!
 They are charging them, look back!
 They are charging them, look back!

This is more simple and orderly; and the song may be regarded as falling naturally either into three sections of two phrases each, or into two with three phrases each. There is some reason in the melody itself for suggesting the former division, for at C, where the middle part should begin, we have a return to the idea in A; but this does not militate against an argument for two three-part sections where the third part is built on the plan of the first, and this the writer believes to be the case for each half. The numbers I and II indicate these halves. Beginning with A, then (the triplet also seems to me musically of more importance than the dotted-eighth rhythm of the second measure, and hence more clearly to mark the divisions), we see that B answers it in a similar style, starting on the dominant of the key (or we will call it such, for convenience). This sequence of the melody on the fifth has been discussed by Helmholtz,² and is commonly found in the music of many peoples. The section is completed by a return to the first idea, which is cut short, however, by a slightly new melodic element coming in with the words "Your friends." It is an octave lower than A. The second section begins on the same pitch as was used to open C; but, quite properly, now the melodic theme which is resumed is that of B, although it is a fifth lower than that phrase, and falls short of an exact transposition in the last two notes. Because it is so similar in plan, it has been designated as B'. The middle phrase, unlike C, — which, in addition to introducing a new melodic

¹ Or, "Your friends are charging them." It is possible here, as in so many Indian languages, that the word-order is verb, noun.

² On the Sensations of Tone as a Physiological Basis for the Theory of Music, translated by A. J. Ellis (London, 1885), part 3, pp. 254, c, d, and 255.

thought, contained new words, — is merely an exact duplication of the middle phrase of the first part, although an octave lower, or again on the fifth of A flat. The final phrase, as if to balance the ideas involved in C and yet to remain true to the prevailing B character, combines the two; and, perhaps for the sake of finality, a coda appears for which there are no words, as if only the sound of the pounding hoofs filled the silence, again coming in on the lowest A flat.

The sequence of measure-formation is as follows, and confirms the correctness of the present analysis. There are two distinct rhythmic patterns in the song combined by various types of connectives. These are indicated by the line of braces beneath the staves.

332
 332
 32
 332
 332
 32—3

We may now turn to the subject of closer analyses, or those which depend largely for the value of their results upon the study of tonal content and relationships.

As has already been indicated, to properly conduct these, some method of measuring tones and accurately expressing their pitches is very desirable when first transcribing. Then, to fully appreciate and understand the resulting scales, it is necessary to discover what may have been the instruments used, if any, and how their tones compare with those employed in singing. Until we know something about this, and possess a number of records of the same song produced under conditions already mentioned, which would determine accidental and invariable pitch-selections, generalizations on any supposed "off" singing are apt to be based on misconceptions, and indeed even practically worthless.

The influence of instruments, not only in the selection of scales, but in the styles of composition, — primitive, classical, and modern, — especially in the matter of transpositions and inversions,¹ has never been adequately investigated, although Helmholtz² has proved beyond doubt that the scale systems of all those peoples whose music he has studied were worked out with their aid. The argument may be adduced that this refers to instrumental music only; but this is refuted by his remarks upon the psychological effect of sound-variations on accustomed and unaccustomed hearers, on the appreciation of finer *nuances* of tone among people employing many divisions of the octave, and on the effect that the piano has had on the production and enjoyment of tempered, even mistuned intervals, rather than true ones, physiologically speaking, among singers and musicians who can control the tones of their instruments to the finest shades of pitch. This may account for Miss Densmore's statement³ that it was repeatedly noted that intervals of the second and minor third were sung too small, particularly if she was judging these by piano intervals.

¹ The song chosen as the second illustration in this article is a case in point. It required a voice with falsetto register.

² *Op. cit.*, part 3, chapter XVI, pp. 323-327.

³ Chapter entitled "Method of Work and Analysis," p. 6.

It cannot be sufficiently emphasized, however, that primitive music of the Western Hemisphere involves a problem somewhat different from that of the Eastern; and that is the absence of stringed instruments, which prevented the opportunity of playing with and deriving from them scales of fine shades, which their flexibility suggests. The flute or other wind-instruments and tympanic devices are all that the Indian had. With the former, some shades of tone are possible with misplaced stops and varying *embouchure*. But these instruments, as pointed out by Von Hornbostel,¹ are apt to be copied as exactly as possible by measurement, in making others; so that variation in tone-relationship or actual pitches are probably small, and not likely to have been so often observed. Consequently it must be realized that scales studied by Helmholtz have had a different history from those of the New World, — a history of centuries of theoretical experiment on at least one prevailing type of instrument, which offers at once all possible divisions of the octave, and leaves an æsthetic selection entirely to the artist. The voice, although capable of the finest tone-gradations, is apt to follow the scales of instruments, if these are much used.

The five five-toned scales of Helmholtz referred to by Miss Densmore as having been observed among the Chippewa and Sioux were all of the same tone-material, with each tone in turn serving as an arbitrarily fixed tonic. It is needless to remark that the resemblance between these and Indian scale systems is only external, and that the tones found in a song do not always represent all the tones of a scale.

It is a question as to how far we may go in assuming tonics for Indian homophonic music, or how we may discover them if they exist, since they may be governed by other rules than those which we have adopted. For convenience' sake we can at present do nothing but assign melodies to keys as we use them, and to major and minor tonalities as we understand them, with reservations and explanations such as the author has made. In discussing tonality in the tables, she says, "Since we are considering the music of a period in which what we now designate scales and keys was not formulated, the terms 'major tonality' and 'minor tonality' are used in preference to the common terms 'major key' and 'minor key.'" It is, however, not a matter of "period" at all. American Indian music, particularly the older songs, cannot, in the absence of history, be assigned to any period of development, implying that it was in an evolutionary stage or period of musical growth similar to that already experienced in Europe, for instance, or that its development, such as it was, would ever necessarily have covered the same ground subsequently as that of European music.

The two sets of tabular analyses given in the book are alike in their headings and plan. The first compares old and modern Sioux songs. Table I classifies them into major and minor tonalities, in which it appears for both groups that there is a slight preponderance in favor of the minor. Tables II and III give the first and last notes in relation to a tonic identified by the rules of European harmony, in which the fact is revealed that the fifth above was a favorite opening note, but that in newer songs this has deferred to the tonic and octave to an appreciable degree. There is a wide range of initial tones; but the final notes are practically confined to the tonic triad, and in more than half of the cases to the tonic, in both groups. The chapter which is based on these observations is extremely interesting

¹ "Über ein Kriterium für Kulturzusammenhänge" (*Zeitschrift für Ethnologie*, 1905).

in its outline, and suggests a definite change in several directions from old music to new.

The second set of analyses covers all the songs in a general survey. The first three tables deal primarily with keynotes and with the relation of other tones in the song to them. Although these are established in accordance with European ideas, the proof of their correctness can probably only be established with direct information from the people. The next two tables indicate the range of voices and trend of melodies by giving compasses and the relation of the last note in the song to the compass. Table 6 gives tone-material, and reveals a preference for four different combinations; although others occur that sometimes involve the same number of tones as one of these, but different degrees and relationships. The four preferred are what we know as a major and a minor pentatonic scale, the major or minor triad, and a complete diatonic scale, presumably of either major or minor tonality, although the table and explanatory remarks do not make this clear. The purpose of the summary in percentages (p. 44) is doubtful. It divides the songs into groups according to the number of scale degrees used, irrespective of the fact that utterly different tonal selections may be thus represented. No attempt has been made to combine the tone-material into a few scales. For instance, if one set of songs contains a major triad and sixth, another a major triad and seventh, another a major triad and fourth, another a major triad and second, it is probable that all are related to the triad as a foundation, and to one larger scale of which they are merely temporary selections. Surely it cannot be that forty-one different scales exist, although it is probable that there are more than one.

Table 7 A records accidentals. Since their appearance with major and minor tonalities is not differentiated, its value is partly lost, for the significance of the presence of semitones depends somewhat on this. A raised sixth in minor, for instance, is quite different melodically from one in major. Table 8 A classifies the songs from an harmonic standpoint, and shows that less than half of the melodies could be regarded as so constructed. This is as might be expected in homophonic music. Helmholtz has discussed the futility of associating all music with an harmonic basis as a necessary condition.¹ While the author by no means commits herself to such procedure, and indeed meets an opposite situation in these studies, she does not sufficiently emphasize it, and gives an impression of an harmonic bias, if the term may be allowed, in her analyses as a whole.

The next four tables give the direction of first progressions, the total number of them in all the songs, and the kind of intervals taken upward and downward. The results indicate a pronounced preference for downward movement and small intervals. In discussing the latter, the author remarks that the comparative infrequency of the semitone would indicate that smaller intervals are not habitually used! The meaning of the following paragraph,² therefore, is not clear:—

"It is admitted that they frequently produce vocal sounds which differ from one another by a number of vibrations less than that comprised in a semitone; but the writer finds no evidence, on phonographic records of about a thousand songs, that such sounds are part of a system consciously used

¹ *Op. cit.*, p. 253, a, b.

² See p. 47.

by the Indians. Animals express emotion by means of sounds which glide from one pitch to another. Such expression is primal, but into song there enters an intellectual element which tends to produce definiteness of tonal intervals."

Possibly Miss Densmore has in mind speech or howling cries; but the controversy over the use of intervals of less than a semitone, so far as the present writer knows, has been confined to song.

Table 13 gives the average number of semitones in an interval. It is not clear what such an average could prove, since no such interval, composed of 3.021 semitones, is stated to have been used. The major second, both in upward and downward progression, occupies, as might be expected in a diatonic system, the most conspicuous place. Table 14 A lists exact keys, and indicates voice ranges.

The remaining tables introduce rhythmic questions; No. 15 A, the method of attack. It cannot be said, however, as Miss Densmore states on p. 48, that, because the majority of songs begin on the principal accent (and on the tones of the tonic chord), a clearness of musical concept on the part of the Indian is thereby suggested. Surely such clearness cannot be denied to the classical composers of such pieces as dance-suites, in which well-defined rules were prescribed for beginning such dances as the *Courante*, *Allemande*, *Gavotte*, *Bourrée*, and *Passepied* on weak beats; nor to the composers of countless compositions of other descriptions thus beginning; nor to recent composers like Schoenberg, who seem to make a point of avoiding the tonic chord whenever possible. Tables 16 A and 17 A are covered by previous remarks. The rhythm of the first measure is usually to be mistrusted above all others, because of the difficulty of starting easily and correctly, which is experienced by singers, both primitive and otherwise, when singing into the phonograph. The term "rhythm" should be replaced by "metre" as a heading in 16 A, since this is the feature tabulated. The remaining tables are all descriptively interesting and useful.

The graphic devices for illustrating points brought out in the tables are helpful for a quick appreciation of values, but the plots of melodies are perhaps the most valuable of all. Miss Densmore has by this means discovered several well-defined types of tunes, all of which, however, show downward trend.

The theoretical part of the book closes with a descriptive comparison of Sioux and Chippewa songs, an account of a test of pitch discrimination in which the results were about on a par with those of average white subjects, and a short discussion of music as a cultivated art among the Chippewa and Sioux. It is clear that certain æsthetic standards prevail, particularly in the matter of rendition. The investigation as to composition has developed only along the lines of inspiration, not of method. The statement is made that progress in musical matters is evinced by the younger singers, who, in singing old songs, changed the irregularities of measure-lengths and otherwise unified them. Probably this is due to the influence of the white man's music. The standards of excellence in rendition may be compared favorably with our own; but it is not yet safe to make this a general assertion in regard to the whole Indian race, since in music, as in other features, we may find rather conspicuous differences among the various culture groups.

HELEN H. ROBERTS.